View metadata, citation and similar papers at core.ac.uk

brought to you by CORE

provided by Elsevier - Publisher Connector

ACC.12
61st Annual Scientific Session & Expo
ACC-i2 with TCT innovation in intervention

E1350
JACC March 27, 2012
Volume 59, Issue 13

Imaging

RELATIONSHIP BETWEEN HOMOCYSTEINE, HYPOVITAMINOSIS AND PERICARDIAL FAT MEASURED BY CORONARY COMPUTED TOMOGRAPHY

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Saturday, March 24, 2012, 11:00 a.m.-Noon

Session Title: Imaging: CT - Novel Applications of Non-Contrast CT
Abstract Category: 24. Imaging: CT
Presentation Number: 1112-574

Authors: *Soeren Gauss, Stephan Achenbach, Fernando Vega-Higuera, Dominik Bernhardt, Mohamed Marwan, Daniel Bittner, Annika Schuhbaeck, Lutz Klinghammer, Dieter Ropers, Werner Daniel, Yurdaguel Zopf, University of Erlangen, Erlangen, Germany*

Background: Pericardial fat is discussed to be an independent risk factor for CAD. There is close relation between the amount of calcium in the coronary arteries and the amount of pericardial fat. Pericardial fat is correlated to traditional risk factors like BMI, hypertension, male gender and higher age. The correlation of risk factors associated with nutrition to pericardial fat has not yet been investigated. We therefore examined the relationship between homocysteine, the vitamin B complex - which influences homocysteine levels - and pericardial fat as quantified by coronary computed tomography.

Methods: We prospectively enrolled 456 patients with suspected coronary heart disease who underwent coronary computed tomography using a low-dose, prospectively ECG-triggered high pitch spiral acquisition protocol ('flash mode', dual source CT, 280 ms rotation, 2x128x0.6 mm collimation, 120 kV tube voltage, 80 mAs tube current). Afterwards pericardial fat was measured. Patients taking oral vitamin supplements and patients with known CAD were excluded. Traditional risk factors and serum values of hs-CRP, homocysteine and B-Vitamins were analyzed and correlated to the presence and extent of calcium and pericardial fat.

Results: 327 male (71.7%) and 129 female (28.3%) patients were enrolled. In univariable analyses the amount of pericardial fat was significantly correlated to the traditional risk factors such as BMI, age, male gender, hypertension, diabetes and hyperlipidemia as well as hs-CRP ($p<0.001$), vitamin B12 ($p=0.012$) and homocysteine ($p=0.029$). In multivariable analyses vitamin B12 ($p=0.038$), age ($p<0.001$)), male gender ($p=0.001$) and BMI ($p<0.001$) were significantly correlated to fat, while homocysteine was not.

Conclusions: Decreased vitamin B12 levels are an independent predictor for increased pericardial fat while homocysteine is not.